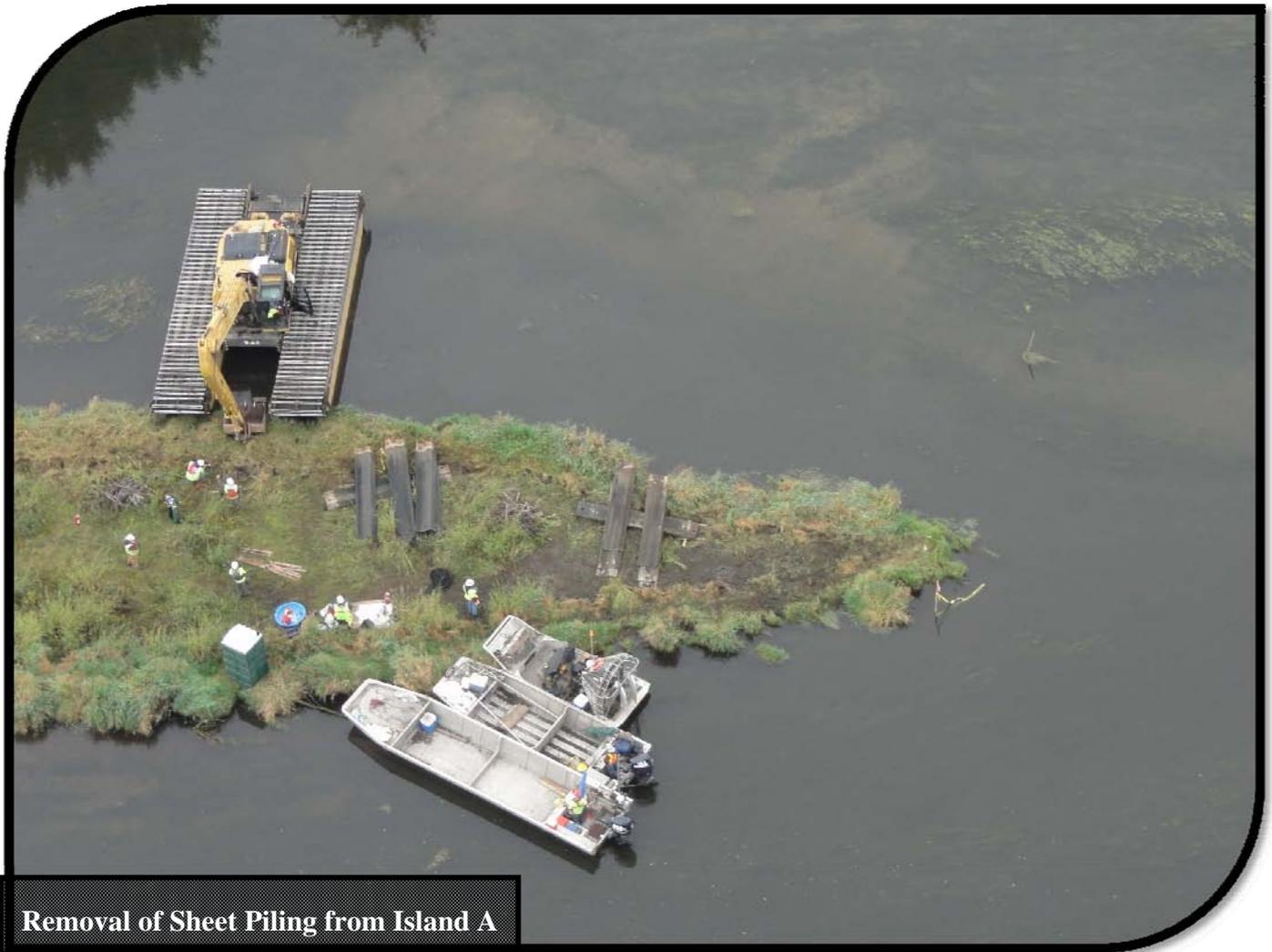


US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #116**



**KALAMAZOO RIVER/ENBRIDGE SPILL – REMOVAL
SITE # Z5JS
MARSHALL, MICHIGAN
LATITUDE: 42.2395273; LONGITUDE: -84.9662018**



Removal of Sheet Piling from Island A

US EPA ARCHIVE DOCUMENT

To: Susan Hedman, U.S. EPA Regional Administrator
James Sygo, MDEQ
Mark DuCharme, MDEQ
Mike Alexander, MDEQ
Lt. Barry Reber, Michigan State Police, Emergency Management
Linda Buzas, Kalamazoo County
Lt. Paul Baker, Kalamazoo County Sheriff's Office
James Rutherford, Calhoun County Public Health Department
Durk Dunham, Calhoun County Emergency Management
Mike McKenzie, City of Battle Creek
Cheryl Vosburg, City of Marshall
Christine Kosmowski, City of Battle Creek

From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

Date: 9/23/2011

Reporting Period: 0700 hours 9/12/2011 through 0700 hours 9/19/2011

1. Site Data

Site Number:	Z5JS	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	OPA	Response Type:	Emergency
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non-NPL	Operable Unit:	
Mobilization Date:	7/26/2010	Start Date:	7/26/2010
Demobilization Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:	E10527	Reimbursable Account:	

2. Previous Response Actions and Current Response Governance

- Previous response actions performed to date may be found in SITREPs #1 through #115.
- Governance for the project is provided by the U.S. Environmental Protection Agency (U.S. EPA) Federal On-Scene Coordinator (FOSC) and the Michigan Department of Environmental Quality (MDEQ). The structure of the response is the Incident Command System (ICS), with the FOSC serving as the Incident Commander (IC).
- The Operational Periods covered in this report are as follows:
 - 0700 hours on 9/12/2011 through 0700 hours on 9/15/2011
 - 0700 hours on 9/15/2011 through 0700 hours on 9/19/2011.

3. Operations Section

- This operational phase of the response consisted of the following Branches: 1) Air Operations; 2) Waste Management; 3) Environmental Compliance; 4) Response Action 5) Monitoring; 6) Wildlife; 7) River Reopening; 8) Talmadge Creek Remediation; and 9) Control Point Management.

3.1 Air Operations Branch

- During the operational periods, six overflights were conducted for situational awareness.

3.2 Waste Management Branch

3.2.1 Decontamination Group

- Equipment and boom which were decontaminated during the operational periods are presented in Table 1.

3.2.2 Transportation and Disposal Group

- Waste management, characterization, and coordination of transportation and disposal continued according to approved plans. Quantities of oil and debris shipped off site during the reporting period are presented in Tables 2 through 5.

3.2.3 Waste Management Characterization Group

- EPA continued oversight of waste characterization activities.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M) Inspections Group

- During the operational periods, teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of accumulated visible oil or oil-saturated soils at sheening bank sites. Daily O&M activity and progress tracking information is presented in Table 6.
- Teams assessed sheening bank sites to determine the necessary course of action and transferred sites to the appropriate response group.

3.3.2 Site Characterization Group

- Teams conducted visual assessments of overbank sites from the confluence of Talmadge Creek and the Kalamazoo River to MP 8.0.
- Teams conducted fish and macro-invertebrate community assessments using electro-fishing equipment and dip nets in various locations throughout the Talmadge Creek.

3.3.3 Oil Recovery Effectiveness Evaluation Group

- Teams continued to perform post-recovery poling at submerged oil recovery locations.

3.4 Response Action Branch

3.4.1 Overbank Surface Cleanup Group

- During the operational periods, overbank surface cleanup work was conducted along the Kalamazoo River.
- Enbridge focused on oil recovery in overbank ponded areas from MP 22.06 to MP 22.23, using marsh buggies, stingers, and tillers. Teams conducted post-recovery poling assessments, following recovery operations.

- Teams conducted tar patty work activities in overbank areas from MP 4.75 to 12.75, pursuant to MDEQ work plans and permits.
- Overbank surface cleanup progress information is presented in Table 7.

3.4.2 Overbank Excavation Group

- Teams continued stabilization of bottom substrates and demobilization from Islands E and F, removal of sheet piling from Island A, and natural community restoration and planting at MP 21.5 Oxbow.

3.4.3 Submerged Oil Kalamazoo River and Delta/Morrow Lake Groups

- Submerged oil recovery operations continued on the Kalamazoo River, Morrow Lake Delta, and the fan of Morrow Lake including areas around the islands at the west end of Morrow Lake Delta (MP 37.75). Recovery operations followed the approved submerged oil recovery tool box techniques.
- Operations focused on resuming recovery of submerged oil between the confluence of Talmadge Creek and the Kalamazoo River and Ceresco Dam.
- Teams conducted site preparation and recovery operations throughout the Kalamazoo River, focusing on the Mill Ponds and from MP 21.5 to MP 36.0. Teams also conducted bulk oil recovery and woody debris removal in the Morrow Lake Delta and the Morrow Lake fan area.
- Submerged oil recovery and cleanup progress information is presented in Table 8.

3.5 Monitoring Branch

3.5.1 Water Quality Monitoring Group

- Enbridge continued soil, sediment, and surface water sampling in accordance with the MDEQ Sampling and Analysis Plan (SAP). Samples collected as reported by Enbridge are provided in Table 9.
- Enbridge continued to conduct turbidity, dissolved oxygen, and temperature monitoring throughout the Kalamazoo River, focusing on active submerged oil recovery work locations.

3.5.2 Air Monitoring and Sampling

- Enbridge continued to implement the 2011 Community Air Monitoring and Sampling Plan. Teams also conducted air monitoring and sampling at work area locations for worker safety and maintained an odor response team. No odor responses were conducted during the reporting period. EPA performed oversight of air monitoring and sampling plan implementation.
- Air sampling and monitoring information is provided in Tables 9 and 10.

3.5.3 Potable Water Sampling Group

- Teams continued sampling residential wells following the monthly and quarterly frequencies, in accordance with the MDEQ SAP.

3.6 Wildlife Branch

- The Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife under US Fish and Wildlife Service (USFWS) direction.

- Throughout the operational periods, the Wildlife Branch conducted turtle trapping and release along the Kalamazoo River. Trapping information is presented in Table 11.
- The Wildlife Branch performed fish relocation from submerged oil recovery and excavation sites based on dissolved oxygen and turbidity monitoring results.

3.7 River Reopening Branch

3.7.1 Outstanding Sites Characterization and Reconciliation (OSCAR) Group

- Personnel continued to consolidate and prioritize outstanding overbank ponded sites, O&M sites, sheening bank sites, and tar patty sites.
- Throughout the operational periods, teams conducted further assessments of OSCAR sites along the Kalamazoo River.

3.7.2 River Poling Reassessment Group

- Teams continued Late Summer 2011 Reassessment poling in areas where submerged oil recovery activities have been completed from the confluence of Talmadge Creek and the Kalamazoo River to Ceresco Dam, downstream of Ceresco dam, and downstream of the confluence of the Kalamazoo River and the Battle Creek River. Areas of light, moderate, and heavy submerged oil remain throughout these areas and were delineated for further removal activities.

3.7.3 River Reopening Coordination Group

- The River Reopening Coordination Group continued to ensure all work is conducted in accordance with the proposed Opening Segments of the Kalamazoo River Plan.

3.8 Talmadge Creek Remediation Branch

3.8.1 Remedial Investigation Group

- Under direction of MDEQ, Enbridge continued defining the nature and extent of remaining crude oil impacts to the sediment, bank, and floodplain area of the Talmadge Creek. Teams conducted visual observations, conducted poling, collected soil cores from the banks of the Talmadge Creek, delineated floodplain areas, and installed and collected ground water samples from temporary wells.
- Enbridge continued to upgrade resource commitment for the remedial investigation activities at Talmadge Creek.

3.8.2 Remedial Action Group

- Enbridge continued mobilization and site preparation for remedial action at Talmadge Creek.

3.9 Control Point Management Branch

- Teams continued to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, and absorbent boom were installed at existing and new locations throughout the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake. Teams also continued to perform sheen sweeps along the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake.

4.1 Situation Unit

- Situation Unit personnel observed and documented progress in all operational areas, and continued to assess areas of interest including locations of oil sheen, oil removal, and decontamination activities. Significant observations during the operational periods include:
 - Remedial Investigation (RI) work continued along Talmadge Creek. Crews continued coring activities utilizing mechanized techniques.
 - Backfill activities and sheet piling removal were conducted at Island E.
 - Sheet pile removal continued at Island A.
 - Significant sheening was observed in South Mill Pond.
 - Woody debris removal and submerged oil recovery work continued at the Morrow Lake Delta and the fan of Morrow Lake. Enbridge continued using low-ground pressure track-mounted excavators for work in the area.
 - Public river access legacy work continued at the McCormick Street, MP 2.25 sites, and Historic Bridge Park.

4.1.1 GIS Specialists

- GIS personnel continued to support operations with the generation of site maps.

4.2 Environmental Unit

- EPA personnel continued directing Enbridge efforts to estimate the quantity of submerged oil remaining as of Spring 2011.
- EPA continued coordination with USGS regarding the evaluation of the hydrogeomorphology of the Kalamazoo River.

4.2.1 Plans/Permitting Group

- Personnel continued to develop MDEQ plans and permit applications, focusing on permit applications for dry former overbank submerged oil sites and tar patty sites.

4.3 Documentation Unit

- Documentation Unit personnel continued organization and archiving of electronic and paper files.

4.4 Resource Unit

- Personnel continued to produce Incident Action Plans (IAPs), support the planning efforts of operations, and provide information to logistics in order to properly prepare and procure resources.

5. Command

5.1 Safety

- Safety personnel continued to conduct work site safety inspections, focusing on awareness of heavy equipment, traffic, and hazards associated with the opening of hunting season.
- Throughout the operational periods, minor incidents occurred, including 2 vehicle accidents, a cut, a back injury, and an ankle injury. All of the affected personnel returned to work.

5.2 Public Information

- The Public Information Officer (PIO) coordinated media interviews and prepared for the upcoming availability session in Kalamazoo County.
- The number of public inquires reported by Enbridge for this period is presented in Table 12.

6. Landowner Environmental Issues

- Landowner environmental issues reported by Enbridge for the operational periods are presented in Table 13.

7. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$39.7 Million. Approximately 86.8% of the ceiling has been spent through September 18, 2011. The latest average 7-day burn rate was \$76,869 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 14.

8. Participating Entities

- The Multi-Agency Coordination (MAC) Group continues to meet weekly to discuss the progress of the response. Entities participating in the MAC include:
 - U.S. Environmental Protection Agency
 - Michigan Department of Environmental Quality
 - City of Battle Creek
 - City of Marshall
 - Calhoun County Public Health Department
 - Calhoun County Emergency Management
 - Kalamazoo County Public Health Department
 - Kalamazoo County Sheriff
 - Enbridge (Responsible Party)
- For a list of cooperating and assisting agencies and the congressional presence, see SITREP #51 (Sections 3.2 and 3.3).

9. Personnel On-Site

- Staffing numbers for the entities and agencies active in the response are presented in Table 14.

10. Source of Additional Information

- For additional information, refer to <http://www.epa.gov/enbridgespill>. For sampling analysis data, see <http://response.enbridge.com/response/main.aspx?id=13168>.

11. Clean-up Progress Metrics

Table 1 - Equipment Decontamination

Location/Media	Total	September 2011						
		18	17	16	15	14	13	12
Frac Tanks	0	0	0	0 0		0	0 0	
Vac Trucks-Tankers	1	0	0	1 0		0	0 0	
Roll-Off Boxes	1	0	0	0 0		0	0 1	
Yellow Iron (light)	0	0	0	0 0		0	0 0	
Yellow Iron (heavy)	0	0	0	0 0		0	0 0	
Jon Boats	3	0	0	0 2		0	1 0	
Air Boats	4	0	0	4 0		0	0 0	
Vehicles	7	0	0	2 0		2	1 2	
Boom (feet)	2350	0 600		0	400	350	1000	0
Miscellaneous Items	486	0 72		91	61	87	107	68

Table 2 - Soil and Debris Shipped Off Site (as of 9/18/2011)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	42,846	Terra/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (Ceresco Dredge Only)</i>	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	987	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	4,830	

Shaded and italicized items are discontinued waste streams.

Table 3 – Oil/Water Collected by Location (as of 9/18/2011)

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	51,131
Decontamination	2,053,167
Site A	316,464
Other Locations*	1,349,685
Subtotal	16,007,553
Sludge**	474,215
Total Oil/Water	15,533,338

* Wildlife Center Operations, Sediment Trap Cleaning, Hydro-Vacuuming.

** Sludge collected is tracked as a liquid waste inbound; however, after stabilization, the sludge is disposed of as solid waste. Therefore, the volume of sludge is not included within the cumulative oil/water totals. Stabilized sludge is included in the solid waste disposal metrics.

Table 4 - Liquid Shipped Off-Site (as of 9/18/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Hazardous Water	Dynecol	Detroit, MI	3,594,579
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	905,480
Non-Haz Water	Dynecol	Detroit, MI	913,642
Non-Haz Water	Liquid Industrial Waste	Holland, MI	387,307
Non-Haz Water	Plummer	Kentwood, MI	90,000
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>766,288</i>
<i>Other Material</i>			<i>1,405,525</i>
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	<i>370,200</i>
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	<i>4,976,140</i>
<i>Hazardous Water</i>	<i>Safety Kleen^a</i>		<i>825</i>
<i>Treated Non-Haz Water*</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>150,700</i>
<i>Treated Non-Haz Water*</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	<i>1,968,700</i>
Total			15,529,386

Shaded and italicized items are discontinued waste streams.

† Cumulative quantities may not reconcile with previous reports (due to auditing).

a New Age lab water and methanol mix generated by mobile laboratory.

* Treated Non-Haz Water no longer sent to this location.

Table 5 - Oil/Water Remaining On-Site (as of 9/18/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,533,338
Oil/Water Shipped Off-Site	15,529,386
Total Oil/Water Remaining On-Site	3,952

Table 6 – Daily Activity/Progress

	September 2011						
	18	17	16	15	14	13	12
Operations & Maintenance Site	139	139	139	139	139	139	138
Boom Locations							
Control Points	12	12	12	12	12	12	12
Protective Containment Sites	42	42	42	42	42	42	43
Total Surface Hard Boom (ft) [Control Point Surface Hard Boom]	45,375 [30,100]	45,375 [30,100]	45,375 [30,100]	45,475 [30,100]	45,375 [30,100]	45,375 [30,100]	45,475 [30,100]

Table 7 – Overbank Surface Cleanup Progress (as of 9/18/2011)

	Tar Patty Sites	Strike Sites
Sites Identified for Cleanup	237	59
Cleanup Complete and Completeness Check Form Signed	174	27
Percent Complete	73.4%	45.8%

Table 8 – Submerged Oil Recovery and Cleanup Progress (as of 9/18/2011)

Sites Identified for Cleanup	216
Cleanup Complete and Completeness Check Form Signed	137
Percent Complete	63.4%

Table 9 – Samples Collected By Enbridge

Sample Type	Total	September 2011						
		18	17	16	15	14	13	12
Surface Water	0	0	0	0	0	0	0	0
Private Well	32	0	0	0	2	11	12	7
Groundwater	64	0	9	12	8	9	12	14
Sediment	54	0	0	0	0	0	0	54
Soil	315	0	72	63	45	57	69	9
Air (Community and Odor Complaint)	133	19	19	19	19	19	19	19

Table 10 – Real Time Air Monitoring Counts By Enbridge

Monitoring Location	Total	September 2011						
		18	17	16	15	14	13	12
Community	1993	88	303	335	319	271	317	360
Odor Response	0	0	0	0	0	0	0	0
Work Area	1120	0	204	191	184	158	196	187

Table 11 – Wildlife

Location/Media	Total	September 2011						
		18	17	16	15	14	13	12
Turtles in Captivity	70	70	56	51	50	61	55	65
Turtles Captured (Oiled) – Field Cleaned	131	38	27	5	17	4	19	21
Turtles Captured (Oiled) – Admitted to Wildlife Center	31	14	5	2	1	3	3	3
Turtles Captured (Un-oiled) – Field Released	312	121	57	15	30	16	50	23
Turtles Released from Captivity	24	0	0	1	1	2	1	10
Hatchlings Released from Captivity	0	0	0	0	0	0	0	0

Table 12 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	September 2011						
		18	17	16	15	14	13	12
Marshall Community Center	25	00	868				0	3
Oil Spill Public Information Hotline	10	00	212				3	2
Website	0	00	000				0	0
Total Public Inquiries	35	0	0	10	7	10	3	5

Table 13 – Landowner Environmental Issues (as of 9/19/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	14	0

Table 14 - Financial Summary

Item	Expended (Cumulative) (as of 9/18/2011)
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ 683,330
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,951
T&T Bisso (EPA:HS800008)	\$ 882,087
Total Other Contractors	\$ 1,068,038
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 17,105,603
T032-Sampling	\$ 183,597
T037-Doc Support	\$ 980,609
Total START Contractor	\$ 18,269,809
Response Contractor Sub-Totals	\$ 22,595,418
EPA Funded Costs: Total EPA Costs	\$ 5,272,695
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$ 29,691,795
Indirect Cost (16.00%)	\$ 4,750,687
Total Est. Oil Spill Cost	\$ 34,442,482
Oil Spill Ceiling Authorized by USCG	\$ 39,700,000
Oil Spill Ceiling Available Balance	\$ 5,257,518

Shaded items are discontinued

Table 15 - Personnel On-Site

Agency/Entity	September 2011						
	18	17	16	15	14	13	12
U.S. EPA	0	3	5	5	5	6	5
START	4	41	45	44	45	46	48
MDEQ	0	0	3	5	4	4	4
MDEQ Contractors	0	8	10	11	11	10	11
Calhoun County Public Health	0	0	0	4	0	0	0
Calhoun County (CC) EM	0	0	0	0	1	0	0
City of Battle Creek	0	0	0	0	0	0	0
City of Marshall	0	0	0	0	0	0	0
Village of Augusta	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDCH	0	0	0	1	0	0	0
USGS	0	0	0	1	1	1	1
Michigan State Police EMD	0	0	0	0	0	0	0
Enbridge – Operations	17	78	137	153	149	151	143
Enbridge – Field	21	530	550	542	569	606	590
Enbridge – Security & Flaggers	7	7	7	7	7	7	7
Enbridge – Wildlife and Comm.	5	6	15	16	15	12	12
Total	54	673	772	791	806	843	821

*Enbridge Operations and Field include Enbridge and contractors as reported by Enbridge